Kennedy Building Apartments

369 Washington Street

Assessors Map 49, Lot 009

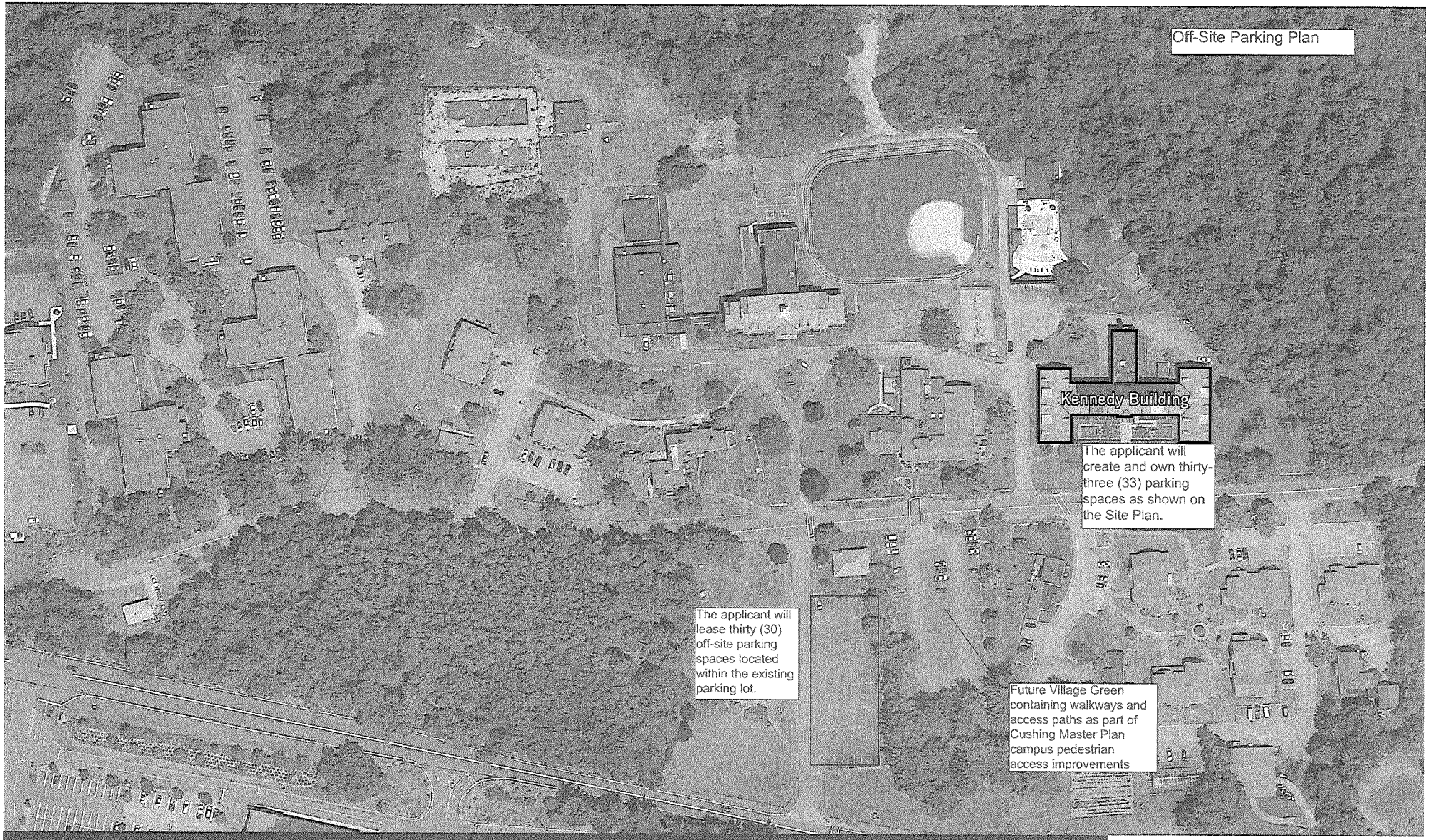
Comprehensive Permit Application

Submitted to the Hanover Zoning Board of Appeals

September 4, 2013

Parking Plan

The Applicant is proposing to redevelop the Kennedy Building into 37 units of residential rental housing – 8 1-BR units, 25 2-BR units and 4 3-BR units – and ancillary community and common area space plus approximately 4,855 square feet of health center space to be retained by the Cardinal Cushing Centers ("CCC"). In connection with the redevelopment of the Kennedy Building, the Applicant is proposing to create 33 on-site parking spaces, which will be located within the site/lease area controlled by the applicant and around the rear of the building. The 33 on-site parking spaces include 3 handicapped spaces. Additionally, through its ground lease with CCC, the Applicant will have the right to use an additional 30 parking spaces located in an existing, adjacent parking lot owned by CCC, as shown on the attached parking plan. These additional parking spaces will be available for residents and guests of the Kennedy Building and are located in close proximity and within easy walking distance to the Kennedy Building. As a result, the Kennedy Building will have a total of 63 parking spaces available for residents, guests and management of the Kennedy Building, which is anticipated to meet the parking needs of the development. In fact, as noted in the attached Memorandum from McMahon Associates ("Memorandum"), the 63 parking spaces are expected to provide an adequate number of parking spaces to accommodate the average hourly parking demand for the proposed residential units. Additionally, the design and layout of the parking spaces has been done in an effort to minimize traffic impacts and ensure the safety of residents. As noted in the Memorandum, the number of vehicles is not expected to impact traffic operations within the vicinity of the project site and adequate sight distances are available at the project site.



Kennedy Building

Hanover MA

Site Plan

0 25 50 100'

January 30, 2013

DEVELOPER : Cardinal Cushing School

ARCHITECT : The Architectural Team

tat | the architectural team

McMAHON
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MEMORANDUM

TO: David Aiken, Planning Office of Urban Affairs

FROM: Gary McNaughton, P.E., PTOE

DATE: April 18, 2013

RE: Proposed Hanover 40B Traffic Assessment
369 Washington Street
Hanover, MA

McMahon Associates has conducted a traffic and parking assessment for the project site located at 369 Washington Street in Hanover, MA, known as the Kennedy Building at the Cardinal Cushing School. The proposed project would include the renovation of the existing Kennedy Building to contain 37 new residential units and the existing 4,500 square feet of health center and office space. There would be 33 parking spaces onsite and shared parking at the surface parking lot across Washington Street. This assessment includes a review of the existing conditions, the proposed project, including trip generation and distribution, and parking requirements. This memorandum documents our findings.

Existing Site Conditions

The project site contains an existing building, referred to as the Kennedy Building, which is located at 369 Washington Street in Hanover. It currently houses administrative offices, classrooms, and a small health center related to the adjacent Cardinal Cushing School. The existing project site also provides approximately 15 parking spaces at the rear of the Kennedy Building. Access to the campus is provided via two driveways on Washington Street, the first driveway providing direct access to the Kennedy Building and the second driveway providing access to the Cardinal Cushing School as seen in Figure 1. The complex also includes two surface parking lot facilities located across Washington Street. The southernmost parking lot provides 87 parking spaces and the northernmost lot provides 85 parking spaces.

Field Review

A site visit was conducted on Tuesday, March 26, 2013 to review operational characteristics of the site as well as parking and other general observations of the surrounding area. The two site driveways of the Cardinal Cushing School and the intersection of Washington Street at Rockland Street/Church Street were reviewed.

During the review, the site driveways were observed to operate well and safely. During the morning peak period, there are few vehicles exiting the site driveway and minimal delay occurs. Additionally, the through traffic volume along Washington Street is relatively low during the weekday morning peak period resulting in overall roadway operations well below capacity.

Adequate sight distance is available at each of the site driveways in both directions for the posted speed limit of 25 miles per hour along that segment of Washington Street. The American Association of State Highway and Transportation Officials (AASHTO) requirement for stopping sight distance for vehicles turning left and right is 240 feet and 280 feet, respectively. The available sight distance in either direction at the site driveway is approximately 500 feet, greatly exceeding the AASHTO requirements. Additionally, three crosswalks are provided across Washington Street, connecting the parking facilities to the Cardinal Cushing School, including the Kennedy Building with appropriate signage advising drivers of the upcoming crosswalk.

Observations of the parking facilities on the south side of Washington Street were conducted as part of the field review. Due to its more convenient location, the southern parking lot was observed to be approximately 75% full (approximately 20 remaining spaces) at 7:30 AM and nearly full at approximately 8:00 AM. Once the southern parking lot becomes fully occupied, vehicles begin to park in the northern parking lot which was observed to be approximately half full (approximately 40 remaining spaces) by 9:00 AM. The majority of people parking in each of the facilities were observed to be accessing the Cardinal Cushing School main building located at 405 Washington Street. There are also a limited number of parking spaces located adjacent to the Kennedy Building, however the majority of parking for the complex is located in the two lots across Washington Street.

Access between the project site and Route 53 is provided via two adjacent intersections: the intersection of Route 53 and the Cardinal Cushing School Driveway to the north and the intersection of Washington Street and Rockland Street/Church Street to the south. The intersection of the Cardinal Cushing School Driveway and Route 53 is an unsignalized intersection with the Cardinal Cushing School Driveway under stop control. Traffic volumes along the Cardinal Cushing School Driveway are low, resulting in acceptable traffic operations at this location. The intersection of Washington Street at Rockland Street/Church Street is also an unsignalized intersection with the southbound Washington Street approach and the northbound Church Street approach under stop control. The posted speed limit on Rockland Street and the western portion of Washington Street is 30 miles per hour. Observations conducted during the field visit indicate that traffic volumes at this location are relatively low and therefore do not create any traffic operational deficiencies.

Accident Data

Accident data for the study area intersections was obtained from MassDOT for the most recent three-year period available. This data includes complete yearly accident summaries for 2008-2010. A summary of the accident data is presented in Table 1. As seen in Table 1, one accident occurred at

each of the site driveway intersections between 2008 and 2010, neither of which resulted in injury. At the intersection of Washington Street at Rockland Street and Church Street, four accidents occurred over the three year period from 2008 to 2010, two of which resulted in personal injury. Overall, very few accidents have occurred at each study area intersection from 2008 to 2010, particularly at the site driveways. The accident data presented in Table 1 is not indicative of any safety deficiencies at the study area intersections.

Table 1: Accident Data

	Washington St. at Site Drives	Washington St. at Church/Rockland St	Route 53 at C. Cushing School Dr.
Year			
2008	1	3	0
2009	0	1	0
2010	0	0	1
Total	1	4	1
Type			
Angle	0	0	1
Rear-end	0	2	0
Sideswipe	0	0	0
Head-on	0	0	0
Other	1	2	0
Total	1	4	1
Severity			
Property Damage	0	2	1
Personal Injury	0	2	0
Fatality	0	0	0
Unknown	1	0	0
Total	1	4	1
Weather			
Clear	1	3	1
Cloudy	0	0	0
Rain	0	1	0
Snow	0	0	0
Ice	0	0	0
Sleet	0	0	0
Fog	0	0	0
Unknown	0	0	0
Total	1	4	1
Time			
7:00 AM to 9:00 AM	0	1	0
9:00 AM to 4:00 PM	1	2	0
4:00 PM to 6:00 PM	0	0	1
6:00 PM to 7:00 AM	0	1	0
Total	1	4	1

Source: MassDOT

Proposed Site Conditions

Trip Generation

The Kennedy Building is proposed to be renovated to include 37 residential units and maintain the existing 4,500 square feet of the health center and office space. In order to estimate the approximate number of trips expected to be generated as a result of the residential units, data provided by the Institute of Transportation Engineers (ITE) was consulted. ITE is a national research organization of transportation professionals and their publication, *Trip Generation, 9th Edition* provides traffic generation information for various land uses compiled from studies conducted by members nationwide. Vehicle trip estimates for the proposed residential units were developed based on data presented in this publication for Land Use Code 221 (Low-Rise Apartments). Table 2 displays the expected number of additional trips for the weekday morning, weekday afternoon and Saturday midday peak hours.

Table 2: Trip Generation

	WEEKDAY AM PEAK			WEEKDAY PM PEAK			SAT MIDDAY PEAK		
Land Use	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Proposed Residential Units[1]	5	19	24	18	10	28	16	13	29

1. Based on 37 proposed residential units utilizing ITE's Land Use Code 221 (Low-Rise Apartment)

As seen in Table 2, the propose residential units would be expected to generate an additional 24 trips (5 entering trips and 19 exiting trips) during the weekday morning peak hour, 28 trips (18 entering trips and 10 exiting trips) during the weekday afternoon peak hour, and 29 trips (16 entering trips and 13 exiting trips) during the Saturday midday peak hour. Along Washington Street in the vicinity of the project site, this additional trip generation would result in approximately one additional vehicle along Washington Street every two minutes during the peak hours.

Trip Distribution

It can be expected that the new vehicle trips entering and exiting the proposed site will follow the same traffic distribution pattern as those currently traveling on the existing roadways. Based on traffic volumes collected on Route 53 just north of the project site, greater than half the vehicle trips are expected to travel northbound to access Route 3 during the morning peak period and return southbound from Route 3 during the weekday afternoon peak period. Traffic volume data on Route 53 indicates that distribution of traffic to the north and south is approximately equal during the Saturday midday peak period.

Vehicles traveling to and from the north on Columbia Road (Route 53) and west on Route 139 are expected to do so via the Cardinal Cushing School driveway located just north of the project site. New vehicle trips traveling to the east on River Street or to the south on Columbia Road (Route 53) are expected to travel south on Washington Street and continue to their respective destinations.

The intersections within the vicinity of the project site are not expected to experience impacts to traffic operations due to the small number of additional vehicles accessing the proposed residential units. To the north, the intersection of Route 53 and the Cardinal Cushing School Driveway is expected to experience an increase of approximately one vehicle every three to four minutes during the peak hours accessing the proposed residential units. To the south, the intersection of Washington Street and Rockland Street/Church Street is expected to experience an even smaller increase in traffic resulting in approximately one vehicle every four to five minutes during the peak hours. Traffic volume increases of this magnitude and are not expected to have a noticeable impact on traffic operations at any of the study area intersections.

Parking

The parking for the proposed building will be composed of 33 dedicated parking spaces adjacent to the building and pool area and 30 shared parking spaces in the southern parking lot across the street, resulting in a total of 63 parking spaces for use by the 37 proposed residential units. In order to estimate the parking demand of the proposed residential units, data provided in ITE's publication *Parking Generation, 4th Edition* has been reviewed. Table 3 summarizes the weekday peak parking demand and the breakdown of hourly parking demand for the proposed 37 residential units.

Table 3: Parking Generation

Land Use	Size Units	Weekday Peak Parking Demand
Low/Mid-Rise Apartment[1]	37 DU	46
Hour	Percent of Peak	Number of Spaces[2]
4:00:00 AM	100%	46
5:00:00 AM	96%	44
6:00:00 AM	92%	42
7:00:00 AM	74%	34
8:00:00 AM	64%	29
4:00:00 PM	44%	20
5:00:00 PM	59%	27
6:00:00 PM	69%	31
7:00:00 PM	66%	30
8:00:00 PM	75%	34
9:00:00 PM	77%	35
10:00:00 PM	92%	42
11:00:00 PM	94%	43

1. Weekday peak period parking demand based on 37 units utilizing Low/Mid-Rise Apartment (LU 221) Suburban land use code.
2. Approximate number of parking spaces in demand during various hours of an average weekday.

As shown in Table 3, the peak period parking demand on an average weekday is expected to be approximately 46 spaces for 37 proposed residential units. The 63 parking spaces proposed as part of the project are expected to provide a sufficient amount of parking for the parked vehicles associated with the 37 proposed residential units.

The *Parking Generation* handbook includes information regarding the hourly parking demand during an average weekday. The table above identifies the hourly percentage of the weekday peak parking demand for the proposed project and the resulting approximate parking demand for each hour.

The parking data provided in the *Parking Generation* handbook indicates that the 33 proposed parking spaces adjacent to the Kennedy Building should be able to accommodate parking associated with the residential units between the hours of 8:00 AM and 7:00 PM. Outside of those hours, the remaining vehicles associated with the residential units can utilize the 30 shared parking spaces proposed to be located in the southern parking lot across Washington Street.

During the field observations, the southern parking lot became fully occupied by approximately 8:30 AM. At this point, vehicles associated with the Cardinal Cushing School would begin to park in the northern parking lot, which by 9:00 AM was observed to be approximately half full. In order to accommodate the parking demand of the existing Cardinal Cushing School and the proposed residential project, the proposed 30 shared parking spaces would need to be vacated by the residential vehicles during the morning peak period. The northern parking facility will be able to provide sufficient parking during the turnover of the shared parking spaces. During the afternoon peak period, vehicles associated with the Cardinal Cushing School would need to vacate the shared parking spaces to provide sufficient parking for the proposed residential units. With this level of management, the shared parking spaces can effectively serve the school and the proposed residential units. The specific times for restricting the use of the parking spaces is suggested to be 9:00 AM and 6:00 PM, but the operations should be monitored and these times adjusted accordingly, if necessary.

Overall Site Review

The proposed project would include the renovation of the existing Kennedy Building to contain 37 new residential units and maintain the existing 4,500 square feet of health center and office space. The project includes 33 parking spaces adjacent to the Kennedy Building as well as 30 shared parking spaces located in the surface parking lot across Washington Street. The existing site driveways at the Cardinal Cushing School appear to operate well based on field observations and are expected to continue to do so with the proposed project in place. The proposed project is expected to generate an additional 24 vehicle trips (5 entering trips and 19 exiting trips) during the weekday morning peak hour, 28 vehicle trips (18 entering trips and 10 exiting trips) during the weekday afternoon peak hour, and 29 vehicle trips (16 entering trips and 13 exiting trips) during

the Saturday midday peak hour. This number of vehicles is not expected to impact traffic operations within the vicinity of the project site.

The 63 proposed parking spaces, both adjacent to the Kennedy Building and across the street, are expected to provide an adequate number of parking spaces to accommodate the average hourly parking demand for the proposed residential units. With the managed use of the 30 shared parking spaces proposed in the southern parking facility and the observed parking availability in the northern parking facility, the proposed shared parking supply is expected to be sufficient for both the existing Cardinal Cushing School and the proposed residential units.